# A $\mu$SR search for magnetism in the cluster compound $Nb_6F_{15}$

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We report zero and longitudinal field studies seeking evidence of magnetism at low temperature in the cluster compound $Nb_6F_{15}$, which consists of a cubic lattice of $Nb_6$ octahedra with a single unpaired electron per octahedron[1,2]. We find characteristic F$\mu$F oscillations, but they exhibit no perturbation (e.g. due to magnetic ordering) down to 3 K. The implications are discussed in comparison with results from NMR[2] and other techniques, where evidence of magnetic ordering at low temperature has been found.

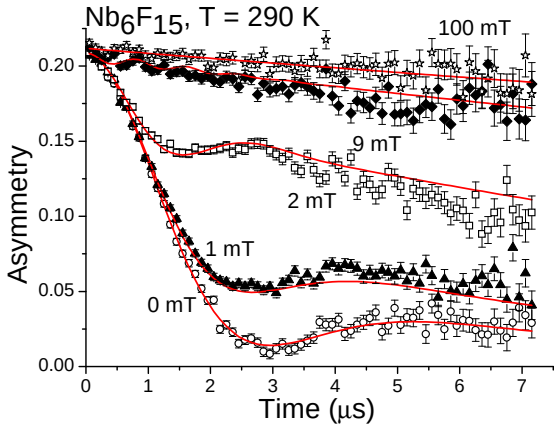


Fig. 1: Longitudinal field quenching of the zero field $\mu$SR relaxation at 290 K in $Nb_6F_{15}$.

[1] H. Schäfer, H.G. Schnering, K.J. Niehues, H.G. Nieder-Vahrenholz, J. Less-Common Met. **9**, 95 (1965).

[2] R. Knoll et al., Physica B **381**, 47 (2006).